English

MEASURING UNIT

MX48

INSTALLATION MANUAL

AFAQ ISO 9001

CE

Fabrication française

OLDHAM

DETECTION GAZ / MESURE A L'EMISSION

GAS DETECTION / STACK GAS MONITORING

OLDHAM SA

GAS AND FLAME DETECTION

STACK *GAS* AND *DUST* MONITORING

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OLDHAM
DETECTION GAZ / MESURE A L'EMISSION
GAS DETECTION / STACK GAS MONITORING

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1. DESCRIPTION

1.1. *the wall-mounted box*

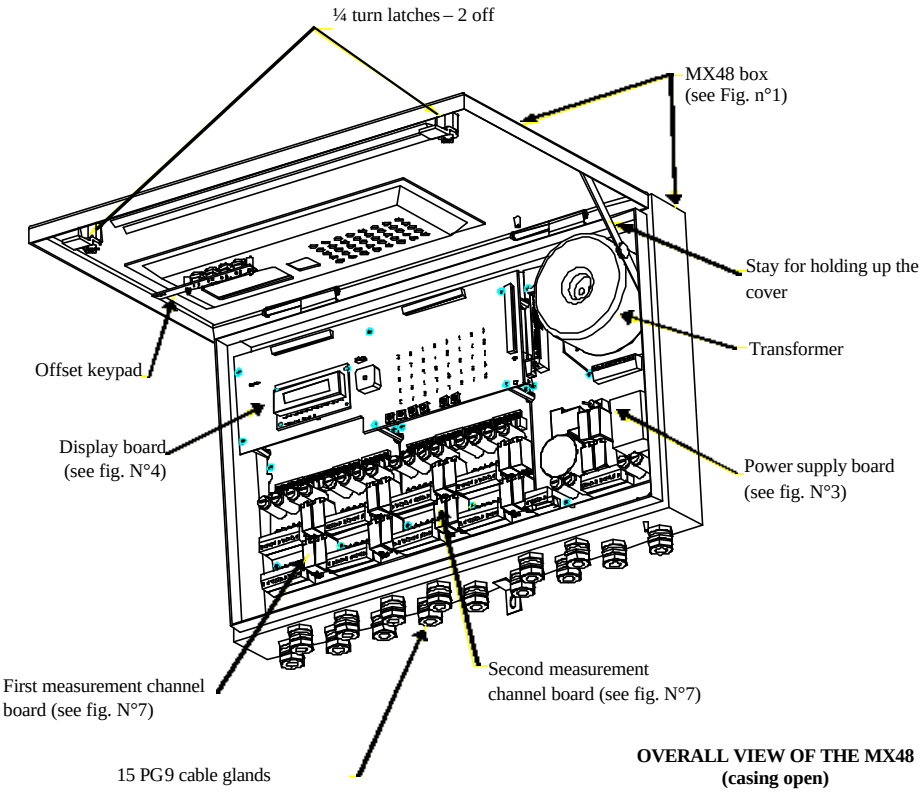
The housing of the MX48 is a wall-mounted box consisting of a back casin and a cover which can be pivoted.

- Dimensions: Fig. 1 (end of this manual)
- Overall view, casing open : Fig. 2

1.2. *The various printed circuit boards*

- Overall view: Fig. 2
- Power supply board : Fig. 3 Chap 5
- Measuring channel board: Fig. 7 Chap 5
- Front link board : Fig. 4 Chap 5
  (Comprising the display, the micro part, the DB9 RS223 and RS485 connector and the keypads).

FIGURE 2 : COMPLETE SET OF BOARDS



OVERALL VIEW OF THE MX48 (casing open)
FIGURE 2

2. INSTALLATION AND CONNECTIONS

2.1. *Installation: recommendations*

The MX48 unit can be installed in any premises without an explosive atmosphere. They should preferably be placed in a ventilated and monitored location (guardhouse, control room, instrumentation room, etc.).

Attachment is to be ensured in accordance with the dimensions in Figure 1 (3 attachment points).

REMARK

In order to permit the swivelling front panel of the unit to be opened completely, allowance must be made for opening by rotation through 90° downwards (see fig 2 – end of this manual)

Before making any connections, the unit should be switched off using the main On/Off switch below and to the left of the FRONT circuit (see Figures 3 rep A).

2.2. *Electrical connections of the MX48 Unit (Fig. 8)*

The MX48 unit is equipped with a pulse automatic device which enables to connect 24 V DC voltage in a lack of 220 V AC voltage so we can use no expansive save power supply.

2.2.1. Alternative power supply

- Voltage: 230 V AC (207 to 244 V) 50/60 Hz
- Maximum power: 200 VA
- Maximum current in cable: 1 A
- Cable: 3 x 1.5 mm² (including earth)
- Location of connection terminal blocks: Fig. 8,
- Protection: the phase and neutral wires are protected by time-delayed 2 A fuses located at the rear of the power module (fig3).
- Voltage: 103 to 122 V AC - 50/60 Hz on option

CAUTION

It is mandatory that the appliance must be earthed. A terminal is reserved for this purpose at the back of the power module: see Fig. 5. This connection is required in order to ensure correct operation of the following:

- mains power interference filter,
- protective devices against electromagnetic interference.

2.2.2. DC power supply

- Voltage: 21 to 30 V continue. The "-" from continue power supply is linked to earth (and earth being linked to frame).
- Maximum power: 150 W
- Maximum current in cable: 6.3 A
- Cable: 2 x 2.5 mm²
- Location of terminal block: see Fig. 8, item D
- Protection: by two fuses located at the back of the power module (Fig. 3)

2.3. *Detectors (Figure 12)*

REMARK

- The detectors are linked by SHIELDED cables.
- The utilization of shielded cables is MANDATORY
- The earth braid of shielded cables must be connected to the earth at one end only.

CAUTION
Each channel is configured in the factory for a given type of detector (explosive gas, toxic gas, fire or flame). If two different types of detector are interchanged, this may result in the destruction of the central unit or of the detector.

2.3.1. Explosimetric detectors of PONT type

Three connecting wires for a shielded cable.

The current commercial designations are as follows:

- CAPTEX
- CEX800
- CEX810

Resistance of detector / unit cable: 16 ohms maximum per wire, i.e. 32 ohms in loop (1 km for cable 3 x 1.5 mm²).

Connection on MX48 unit: see Fig. 10 – Example 1

2.3.2. 3-wire detectors 4-20 mA: 3 connecting wires for shielded cable

The current commercial designations are: CEX820, CEX870, CTX870, CSC870, CSC50, CEX2040 et CTX2042.

- Resistance of detector / unit cable: 16 ohms maximum per wire, i.e. 32 ohms in loop (1 km for cable 3 x 1.5 mm²).

- Connection on MX48 unit: see Fig. 10. – Example 2

2.3.3. 2-wire detectors 4-20 mA: 2 connecting wires for shielded cable

The current commercial designations are as follows:

- CTX / COX 100
- CTX / COX 200
- CTX / COX 50

- Resistance of detector / unit cable: 32 ohms maximum per wire, i.e. 64 ohms in loop (2 km for cable 2 x 1.5 mm²).

- Connection on MX48 unit: see Fig. 11. – Example 2

2.3.4. FIRE detectors: 2 connecting wires for shielded cable

The current commercial designations are as follows:

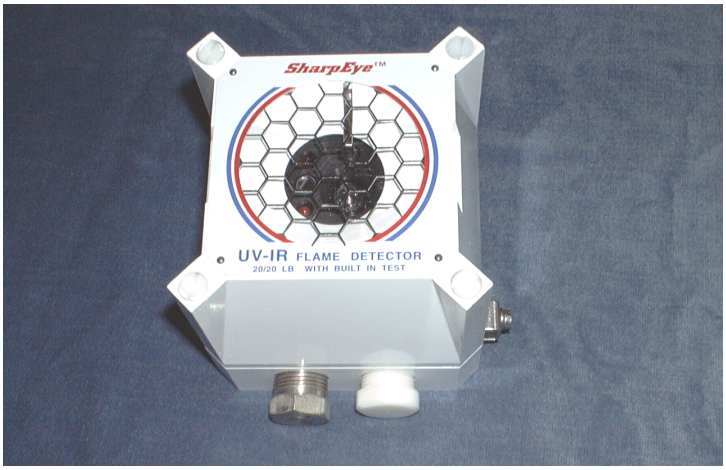
- "Thermovelo" detectors of type EC 11 (sensitive to temperature variations)
- Ionic detectors of type EI 1 100 (sensitive to smoke)
- Optical detectors of type EO 1 100 (sensitive to smoke)

- Resistance of detector / unit cable: 28 ohms maximum per wire, i.e. 56 ohms in loop (2 km for cable 2 x 1.5 mm²)

- Fire detectors can be detected in parallel to a maximum of five. The end-of-loop resistor (2.7 K) is to be placed at the end of the line on the last detector.

- Connection on MX48 unit: see Fig. 11. – example 1

2.3.5. FLAME detectors: 2, 3 or 4 connecting wires for shielded cable depending on utilization



REMARK

The detectors can be supplied with power either via the MX48 unit or by an auxiliary 24 V DC source.

These detectors can operate in standalone mode:

24 V DC power supply and direct utilization of relay contacts in accordance with the technical specification corresponding to the detector used.

The current commercial designations are as follows:

- model 20/20 U - analog - type UV - 752002 (sensitive to UV radiation)
- model 20/20 UC - analog - type UV (sensitive to UV radiation)
- model 20/20 UB - µP technology - type UV - 772002 (sensitive to UV radiation)
- model 20/20 UBC - µP technology - type UV (sensitive to UV radiation)
- model 20/20 LC - analog - type UV/IR (pyroelectric, combination of UV and IR detectors)
- model 20/20 LBC - µP technology - type UV/IR (pyroelectric, combination of UV and IR detectors)
- model 20/20 I - µP technology - triple IR detector - 780002 (pyroelectric, sensitive to IR radiation)

These detectors are equipped with various types of terminal block (see table below).

Model	20/20 U	20/20 UC	20/20 UB	20/20 LC	20/20 UNC	20/20 LBC	20/20 I
Type of terminal block	B	C	A	C	C	C	A

- Resistance of cable / unit
  - In the case of local 24 V DC power supply:
    8.5 ohms maximum per wire, i.e. 17 ohms in loop
  - In the case of power supply via the MX48 unit:
    3 ohms maximum per wire, i.e. 6 ohms * in loop

∗ 4 ohms for detector 20/20 I (IR3)

- Connection on MX48 unit (ONE detector per measuring channel ONLY):
  - detector equipped with a terminal block of type A: see Fig. 13
  - detector equipped with a terminal block of type B: see Fig. 14
  - detector equipped with a terminal block of type C: see Fig. 15

Example of the utilization of the 4-20 mA signal from flame detectors equipped with connectors of type A or C: see Fig. 16.

Example of the utilization of detectors equipped with connectors of either type A or type B and with auxiliary power supply. The auxiliary power supply must be able to supply power to the number of detectors planned in the measuring loop (see Fig. 17).

REMARK

In the case of this application, the maximum of five flame detectors can be connected in the measuring loop.

Example of the utilization of IR3 or UV/IR detectors equipped with connectors of type A with a local junction box and galvanic insulation (see Fig. 18).

2.3.6. CO2 detector of type "Ventostat VT"

- Connection on MX48 unit: see Fig. 20.
- Resistance of detector/unit power cable: 12 ohms maximum per wire, i.e. 24 ohms in loop.
- 4-20 mA output: maximum load = 280 ohms (whole loop)

2.3.7. Specific case of intrinsic safety detectors CTX100 / COX100

Two types of intrinsic safety barrier can be used: Z787 / EX and MTL787S+.

PRECAUTIONS

Before connecting the barrier to the unit, check that the voltage is < 25 V DC.

- A short circuit in the electrical connections will result in destruction of the barrier.
- Perform wiring in the DE-ENERGIZED state.
- The electrical link between the MX48 unit and the clipper is made using a screened cable with two active conductors with a maximum resistance of 12 ohms each.

REMARK
In classified areas, the installation must comply with the standards in force.

- Connections on MX48 unit: see Fig. 21.

IMPORTANT
All intrinsic safety installations must be APPROVED as a whole assembly by an approved organization (DRIRE, etc.).

OLDHAM "INTRINSIC SAFETY" BARRIERS

Type of IS barrier	Reference	Specific features	OLDHAM box reference	
Z787 / EX	6184703	To be fitted on DIN RAIL		
MTL787S+	6797100	To be fitted in an approved box: MANDATORY	For 2 clippers	6797192
			For 5 clippers	6797547
			For 12 clippers	6797101

2.3.8. Other detectors with standardized current output

Any detector (with 2 wires or 3 wires) that can be supplied with power between 19 V DC and 32 V DC and that supplies a standardized current (signal) of between 4 and 20 mA can be connected to the MX48 unit.

The connection requirements are identical to those for the corresponding OLDHAM detectors (see Fig. 22).

2.3.9. Parking application

CTX300 "Co parking" toxic gas detectors can be fitted in parallel when a mean gas concentration is to be obtained. The detectors must, imperatively, be located in the same area. In this case, a maximum of five detectors can be connected (see Fig. 23).

2.4. *Connecting the unit to external devices*

2.4.1. Slaving controls

The 8 measuring channels of the MX48 unit are each equipped with two relays which can be used to control external devices: sirens, solenoid valves, extractors, telephone calls, etc..

For each measuring channel, the relays are distributed in the following manner (see Fig. 7):

- a relay associated with the triggering of alarm 1 (fig 7),
- a relay associated with the triggering of alarm 2 (fig 7),
- use of open or closed contacts selected with a jumper (see Fig. 7 – item A),
- use of positive or negative safety selected by programming (see the CHANNEL programming menu),
- contact outputs on the back of the measuring board (see Fig. 12).

- An example of connection is given in Fig. 24:
  - a siren connected to relay AL1 will be actuated as soon as alarm 1 is triggered,
  - a solenoid valve connected to relay AL2 will be actuated as soon as alarm 2 is triggered.

For all channels:

- A common relay associated with the triggering of alarm 3 for the 8channels (fig 3).

  By programming, this common relay can also be used for the remote transmission of the audio warning signal. (This relay will then be associated with all the unit's alarms).

- A **fault** relay associated with the triggering of channel faults (detector failures, electrical connections, excessively negative zero, etc.). This relay will always be in positive safety mode (see Fig. 3).

- The use of open or closed contacts is selected by programming on common board (see Fig. 3).

- Common relay contact outputs on the back of the power module: Fig. 8.

REMARK

Owing to the breaking capacity of the MX48 unit's relays which is limited to 2 A / 250 V AC or 30 V DC, external intermediate relays must be used if the devices to be controlled require high power levels.

The relay contacts are indicated : unit switched off

2.4.2. 4-20 mA current outputs (Fig. 12)

For each measuring channel, the MX48 unit is equipped with a 4-20 mA output that can be used to retransmit measurements to a recorder or an external PLC. The maximum resistance in loop mode is 600 ohms. The earth connections for the 4-20 mA outputs are common and the unit. The 4-20 mA lines are not galvanically insulated one from the other. The current output varies according to the measurement and has several states, as follows:

- On starting up the unit: I < 1 mA
- With FAULT: I < 1 mA
- In MAINTENANCE mode: I = 2 mA
- ZERO MEASUREMENT: I = 4 mA
- Full scale: I = 20 mA
- Out of range or “in doubt”: I > 23.2 mA

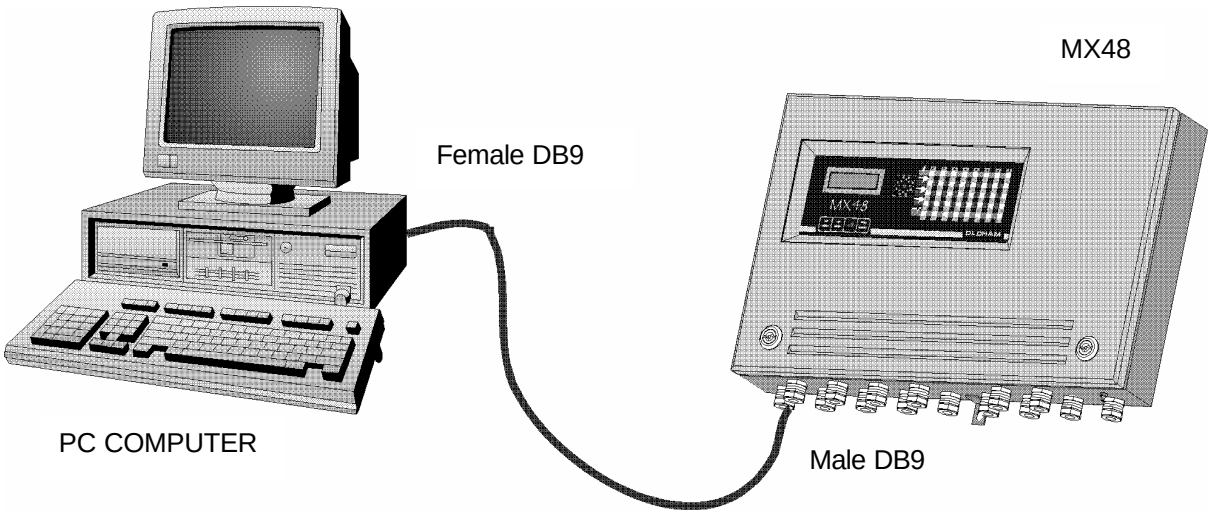
2.4.3. RS 232 and RS 485 outputs

RS232 OUTPUT

A computer can be connected on a female sub.D/DB9 type connector located on the back of the micro board (fig 4 repA). The MX48 programming, from outside, will be possible thanks to this connection.

RS 232 OUTPUT USING

- Remove the DB9 connector (plug with an internal strap)
- Connect a link cable ref.6315831 which will link the monitor to the computer on the MX48 available female connector DB9 (Fig 6)



- when the using is stopped : no connect the cable and put the male DB9 "plug" again.

RS 485 OUTPUT (PINABLE ON FIG 8)

Several MX48 units can be linked to a single computer, which is the "master" of the network. In this case, a "SLAVE NUMBER" (by programming/unit) is asigned to each MX48 unit.

This RS 485 output can be galvanically insulated as an option.

1st case : no galvanic insulation

- no mounted insulation component
- 2 polarization electrical resistances are welded and programmed with J103 and J104 pins

2nd case : with galvanic insulation

- mounted and welded insulation component
- no programmed polarization electrical resistance for "plus" (+ 5V) (J104 programming pins)

  a) with RS 485 shielded

  - no programmed polarization resistor for "moins" (GND) (J103 programming pins)

  b) without RS485 shielded

  - programmed polarization resistor for "moins" (GND) (J103 programming pins)

End loop resistor

It is located on the MX48 micro board and must be programmed **with the last MX48 unit of the loop** (by pins) with a 120 Ohms value.

The MX stored data are some instantaneous values

The RS485 output is a half duplex type.

RS 485 OUTPUT USING

- No change the sub D/DB9 "plug" connector (fig 4 – item A)

- Connect the screwed connector terminals 3, 4 and 5, located on the power supply board of the MX48 unit. See connection details fig 8.

- Owing to mounted wires or not (following the mounting and the equipment linked or not on the earth…).

IMPORTANT

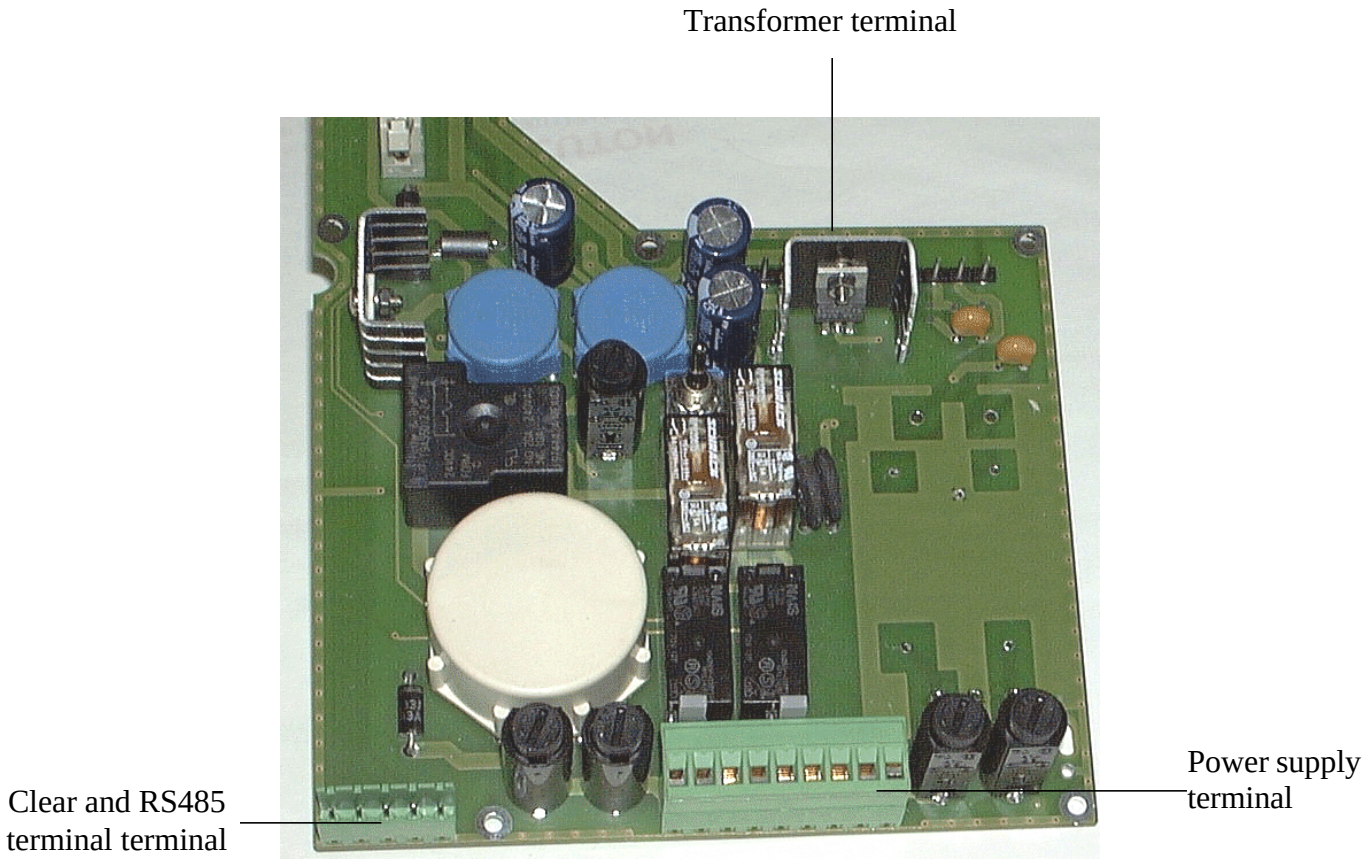
All details regarding the RS 485 complete description (Modbus / Jbus format, structures, adresses aso…) are developped in a CD-R ref CD00003 – Fixe.

CAUTION

A computer or a printer management interface must be used in order to printout the data stored by the MX48 unit. See details and possibilities in a CD-R ref CD00003 – Fixe

2.4.4. Remote acknowledgement

It is possible to allow remote acknowledgement by connecting on terminals clear 1 and clear 2 (loop 16 mA), of the connector located on the power supply board : see fig 8.
Maximum load impedance : 1 K
Remark : several MX48 units can be connected to the same remote acknowledgement system provided that the polarities are respected.



3. STARTING UP

3.1. *Checking the installation*

It is checked that, at least, all connections have been made and that the complete installation complies with current standards in force.

CAUTION
OLDHAM is not responsible for the compliance of the complete electrical safety system.

The MX48 unit is switched on by means of circuit breakers * provided for that purpose and which ensure protection of the mains power unit.

* The circuit breakers are to be selected according to the power consumption levels specified by the manufacturer and the length of the electric cables.

3.2. *Switching on the unit*

CAUTION
The handling operations and adjustments described in these paragraphs are strictly reserved for authorized personnel as they are liable to affect detection safety.

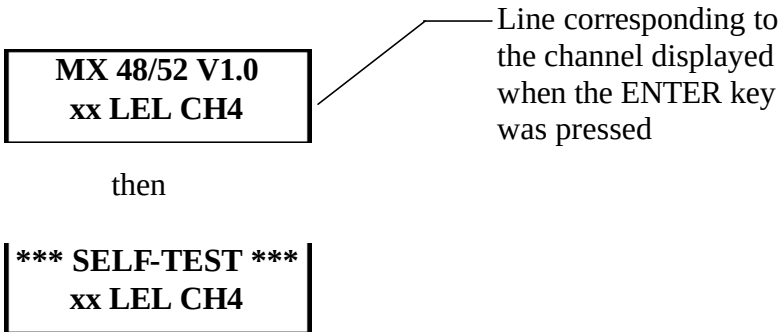
To start up the MX48 unit, you must:

- swivel the front panel,
- press the ON/OFF button located to the bottom left-hand side of the FRONT circuit: see Figures 3 (item A).
- The display panel then shows, for example:

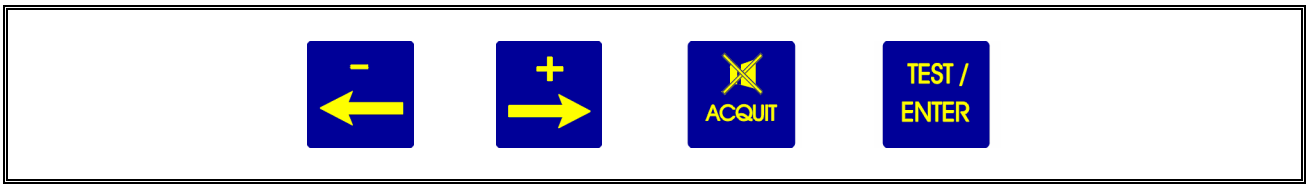
MX 48/52 V1.0

The unit then goes into INITIALIZATION mode for one minute. Consequently, all the alarms are inhibited and the current outputs are 1 mA for the channels in service. The unit then performs a self-test * on its buzzer and all its night-emitting diodes. At the end of this one-minute period, the channels in service return to normal operation and the corresponding alarms and relays are enabled.

* The user can carry out a “manual-self test” by pressing the test key at any time (see Fig. 26). This self-test lasts 20 seconds and the display panel may show the following displays one after the other, for example:


MX 48/52 V1.0
xx LEL CH4
Line corresponding to the channel displayed when the ENTER key was pressed
then
*** SELF-TEST ***
xx LEL CH4

The user can interrupt the self-test cycle before it is completed by pressing the ACKNOWLEDGEMENT key of the front panel keypad.



3.3. *Operating modes*

3.3.1. Audio warning device (buzzer)

In normal operation, the audio warning device is triggered whenever a fault or an alarm appears. The audio warning device can be stopped by pressing the ACKNOWLEDGEMENT key or by remote acknowledgement. The buzzer makes a continuous or discontinuous sound (according to the programming of the unit) if an alarm threshold is exceeded.

3.3.2. Light-emitting diodes (LED) (Fig. 1 and fig 4)

Each channel is equipped with five LEDs (visible and identified on the FRONT panel).

LED	Extinguished	Illuminated in steady mode	Flashing
GREEN	Channel not in service	Channel in service	Threshold AL1 exceeded (manual clearing) and not acknowledged
1st red	AL1 not triggered	Threshold AL1 exceeded (automatic clearing)	Threshold AL2 exceeded (manual clearing) and not acknowledged
2nd red	AL2 not triggered	Threshold AL2 exceeded (automatic clearing)	
3rd red	AL3 not triggered	Threshold AL3 exceeded by mean or time (automatic clearing)	
Yellow	No fault	Fault on channel	-Channel being calibrated or programmed - Detector being calibrated

3.3.3. Alarm thresholds

Each of the three alarm thresholds can be programmed independently for each channel. (See the "Channel programming" menu).

In normal operation, a gas alarm is only triggered after a preprogrammed time delay in order to avoid spurious alarms.

Alarm thresholds can be processed in the following manners:

- in normal cycle with manual clearing:,
- in normal cycle with automatic clearing:,
- in parking cycle:.

The alarm thresholds are to be selected according to the gases detected and the corresponding standards in force.

Special case: A channel connected to a fire detector

- It is MANDATORY to select the scale with 100 divisions.
- It is MANDATORY to select the alarm threshold with 60 divisions.

(Owing to the end-of-loop resistor of 2.7 kΩ, the fire detector outputs 4 mA when no fire is detected and 20 mA if a fire is detected).

3.3.4. Measuring unit

One minute after starting up, and if no test action is performed on the keypad, the unit successively scans all the channels in service and displays the measured values.

Examples of display

Channel 1 **x x LEL CH4**

OR

Channel 2 **x x x ppm CO**

- Each channel is interrogated for 10 seconds.
- The user can interrogate a channel manually by selecting that channel with the + and - keys to obtain a manual display for one minute.
- The user can return to normal cyclic scanning during that one-minute period by simultaneously pressing the + and - keys. The display panel then shows alternating displays, three times in succession:

For example:

Channel 5 **x x x ppm CO**

then

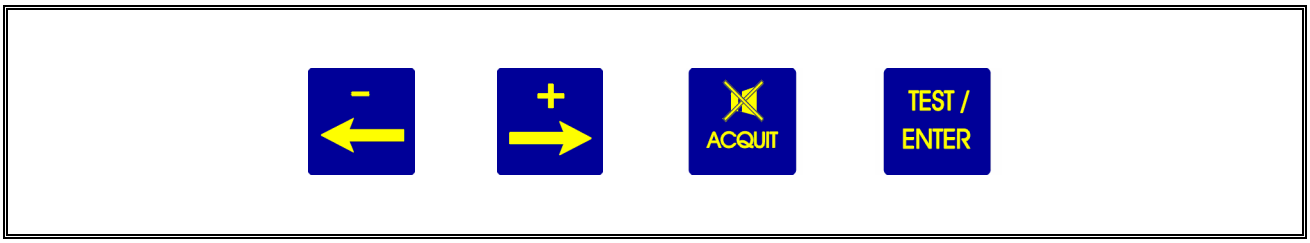
normal scan **x x x ppm CO**

4. UTILIZATION

4.1. *List and functions of the various items of "USER" equipment for programming and calibration of the unit*

4.1.1. Keypads

The first is equipped with four touch keys accessible without opening and swivelling the MX48 unit's FRONT panel, the second is equipped with the same keys accessible by opening and swivelling the FRONT panel for maintenance (Fig 4 rep B).



NORMAL MODE

- Manual display of previous channel
- Combined with the "PLUS" key to restart the channels automatic display cycle.

MAINTENANCE MODE

- Manual display of previous channel
- Decrease value, threshold, etc.
- Display of previous choice (on ← off, etc.)
- NO

NORMAL MODE

- Manual display of next channel
- Combined with the “MINUS” key to restart the channels automatic display cycle.

MAINTENANCE MODE

- Manual display of next menu
- Increase value, threshold, etc
- Display of next chooice (on ← off, etc)
- YES

- “Audio and visual” or “audio” clearing of an alarm
- Exit from a current menu

- Start a self-test manually
- VALIDATE

4.1.2. Maintenance keys

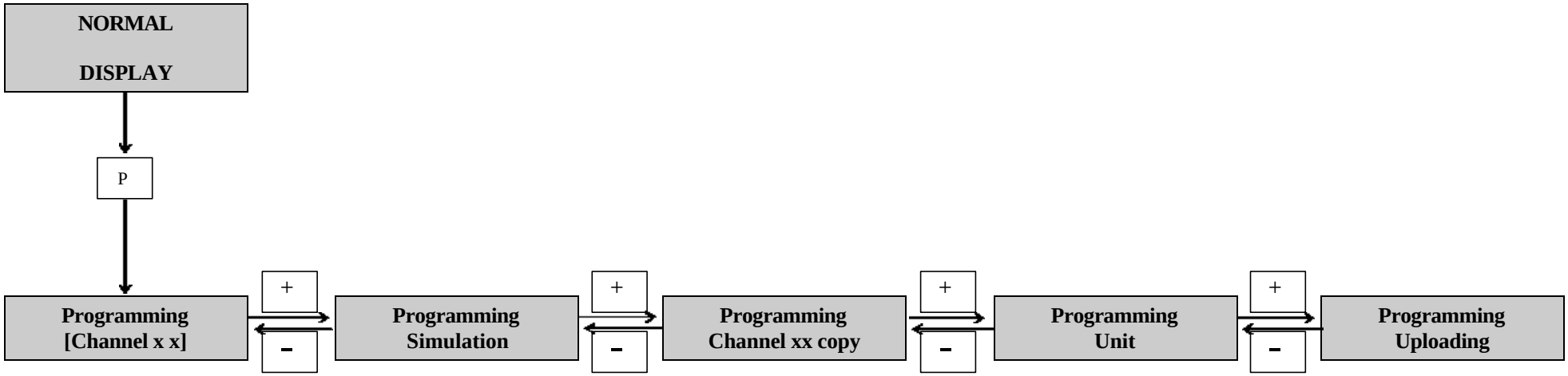
PROGRAMMING key (Fig 4 item D): accessible after opening and swivelling the front panel.

- Combined with the “-” key to go back in a menu.
- To quit normal display mode and access the various menus (see block diagram of the various menus).
- To scroll through a menu.

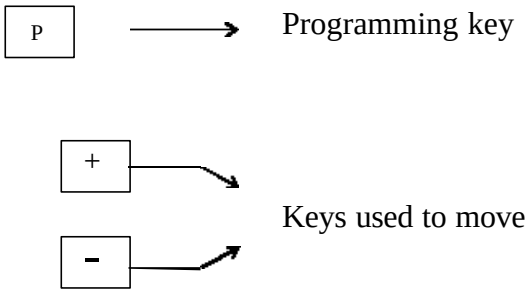
CALIBRATION key (Fig 4 item C) : accessible after opening and swivelling the front panel.

- To set a channel to CALIBRATION mode.
- To quit that mode.

SCROLLING OF THE VARIOUS MENUS

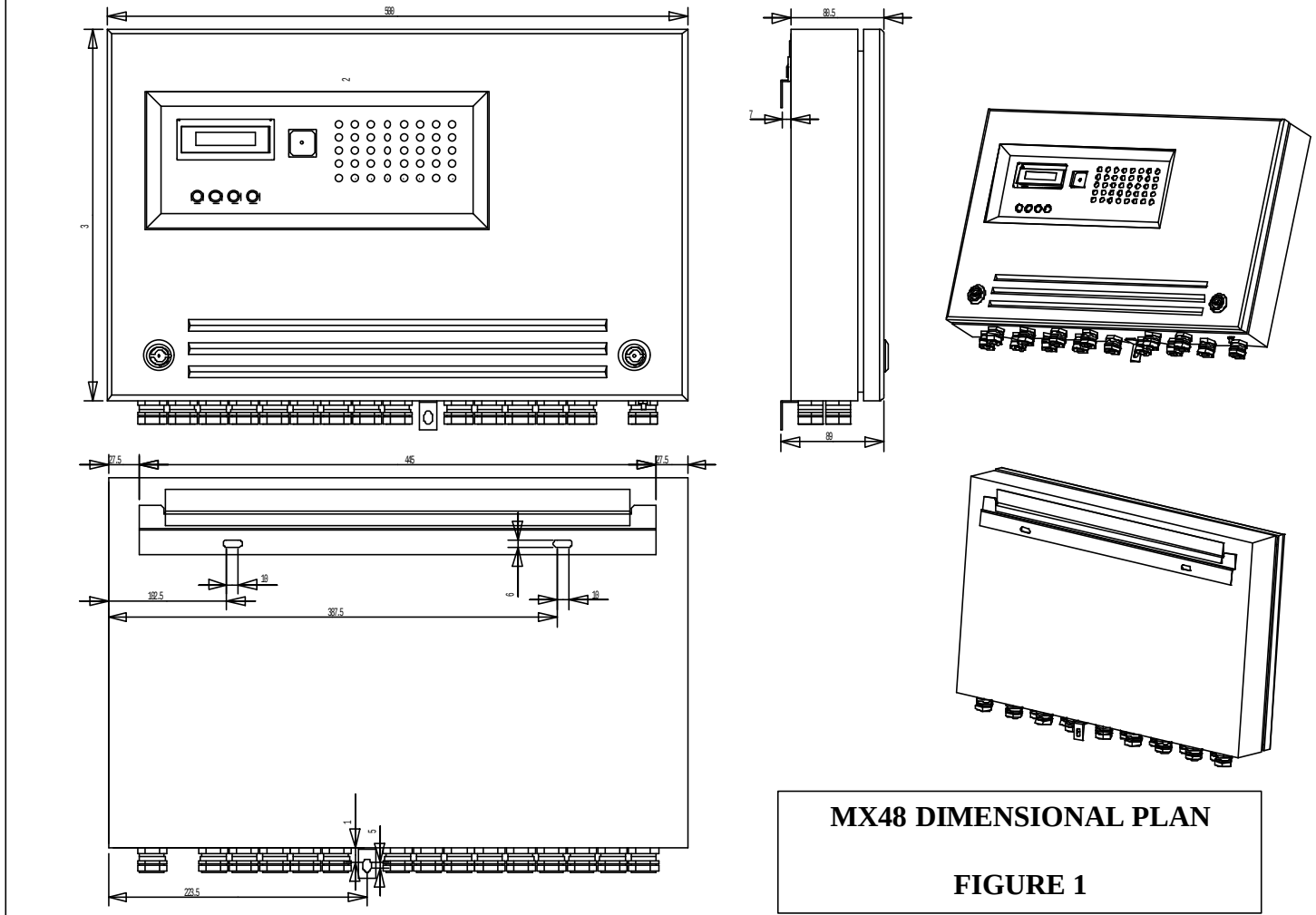


REMINDER



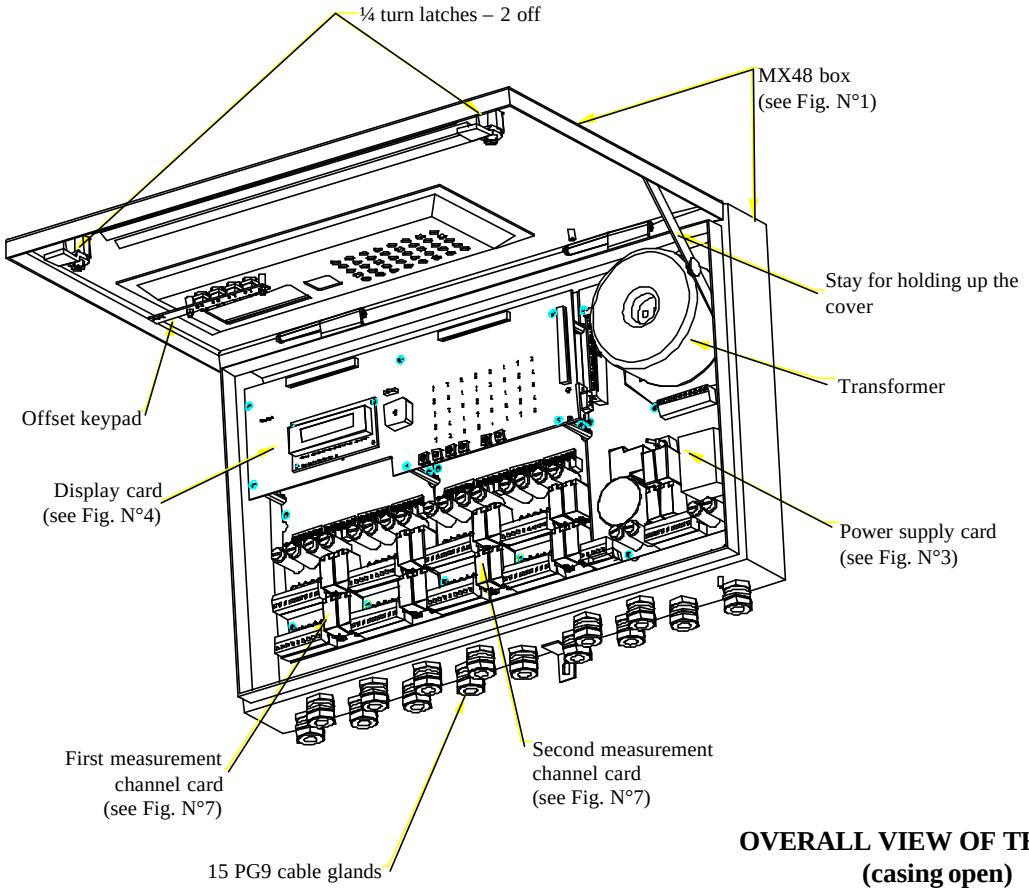
5. VIEWS SPECIFIED IN THE MANUAL

VIEWS SPECIFIED IN THE MANUAL

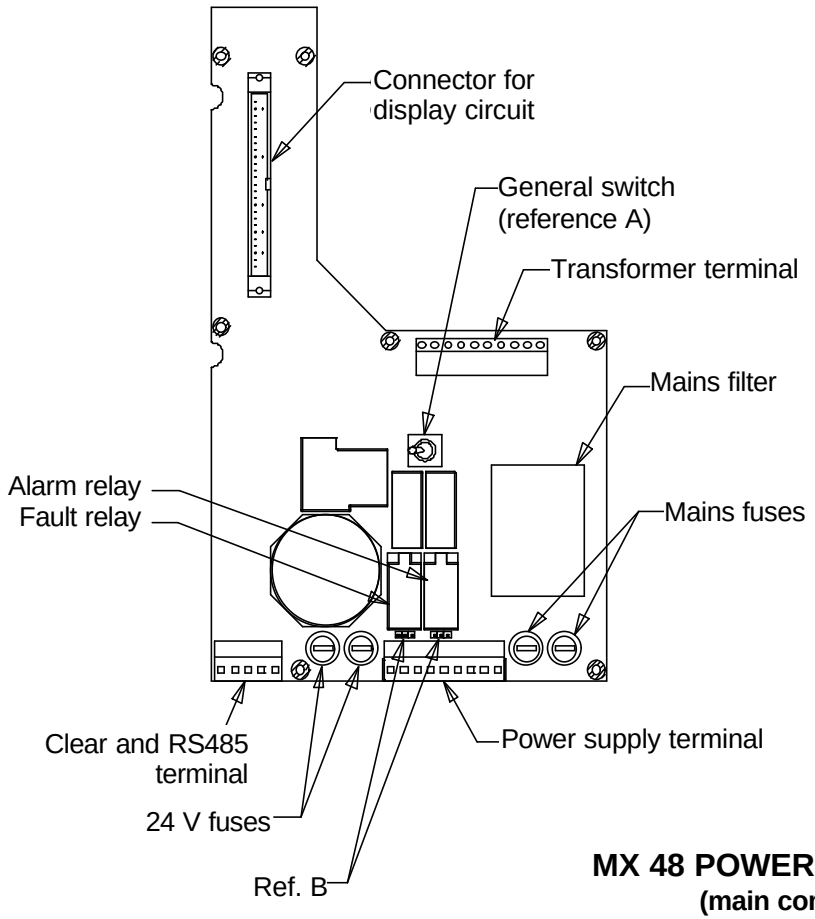


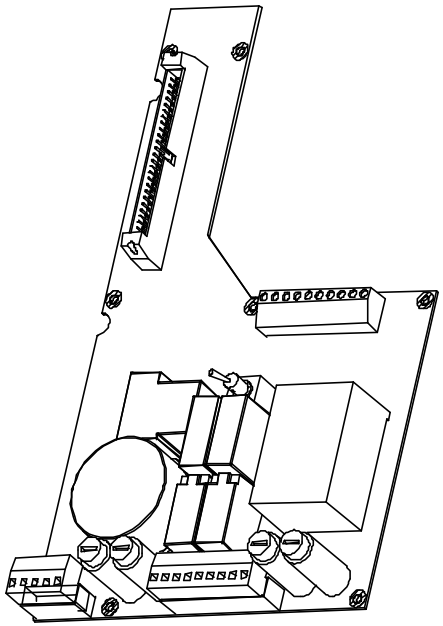
MX48 DIMENSIONAL PLAN

FIGURE 1



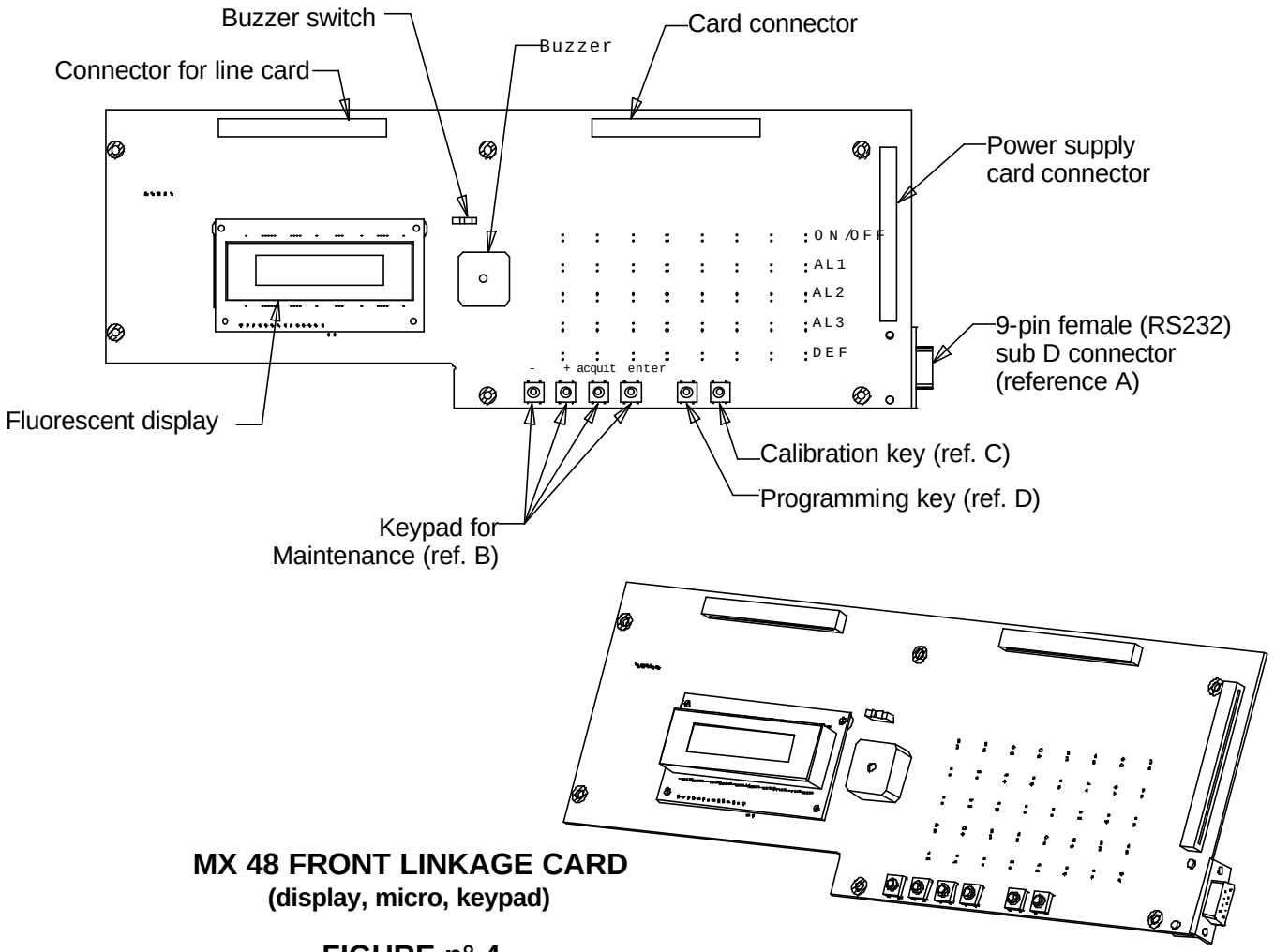
OVERALL VIEW OF THE MX48
(casing open)
FIGURE 2





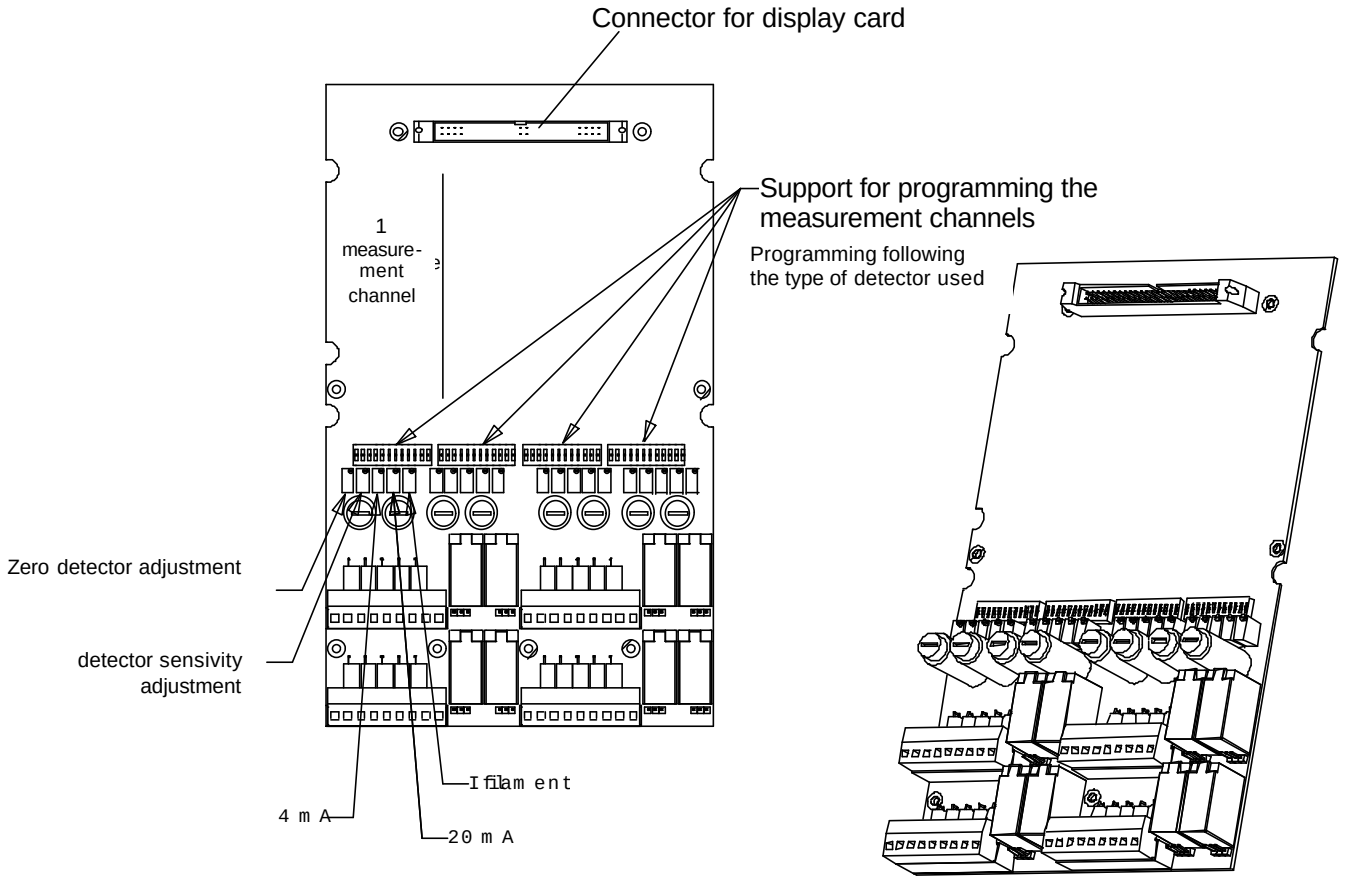
MX 48 POWER SUPPLY CARD
(main components)

Figure N°3

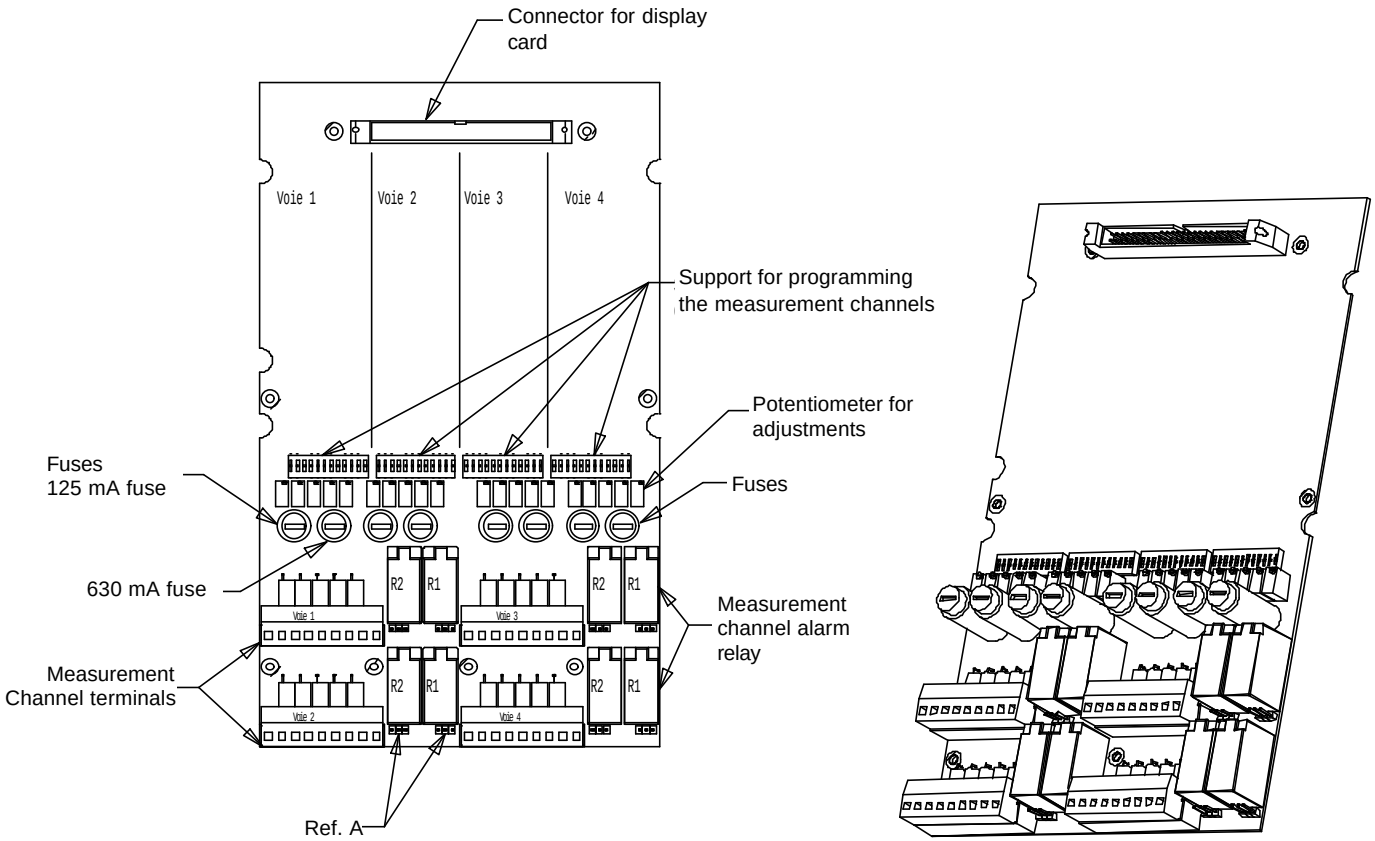


MX 48 FRONT LINKAGE CARD
(display, micro, keypad)

FIGURE n° 4

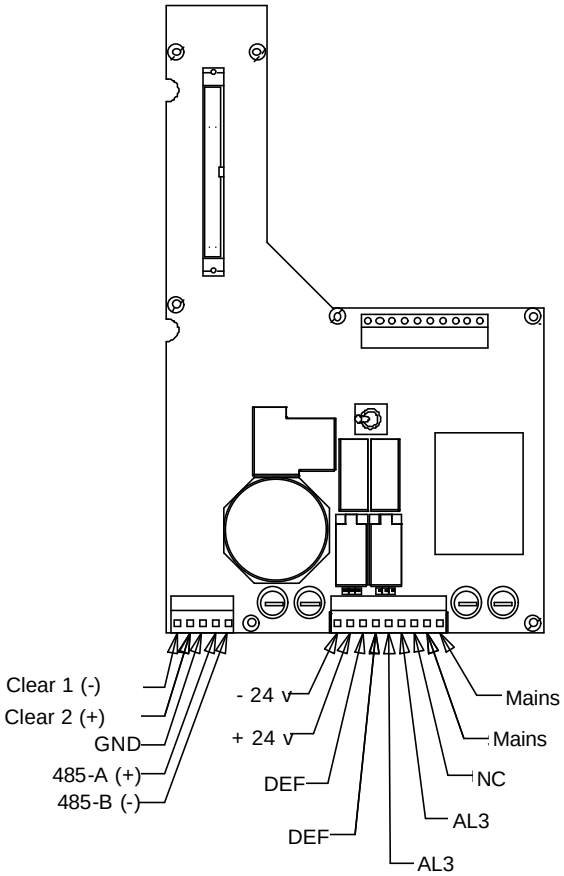


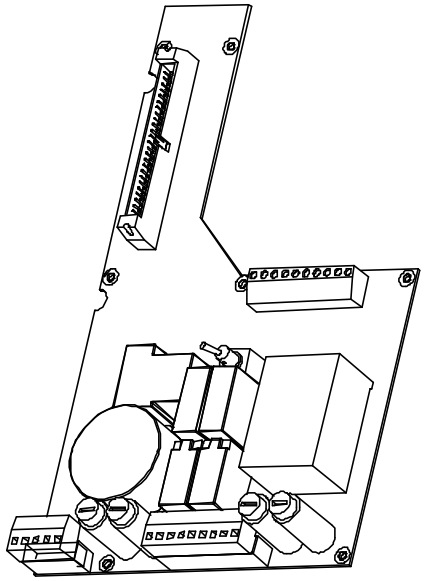
FUNCTIONS OF THE VARIOUS POTENTIOMETERS
On the MX 48 measurement channels card
FIGURE 5



MX 48 MEASUREMENT CHANNELS CARD
(main components)

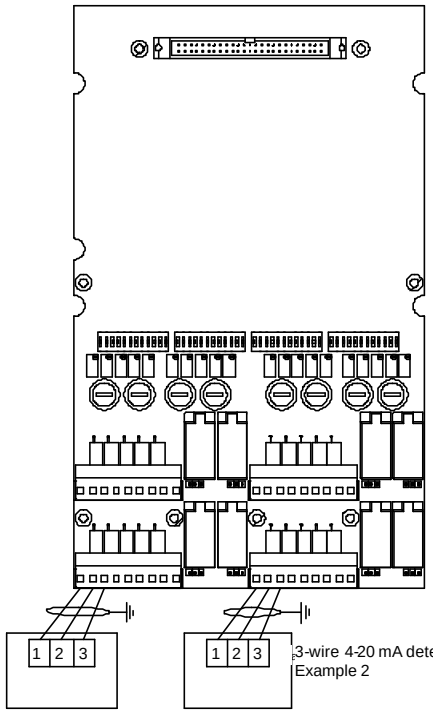
FIGURE N° 7





ELECTRICAL CONNECTIONS TO THE MX48 POWER SUPPLY CARD

FIGURE N° 8

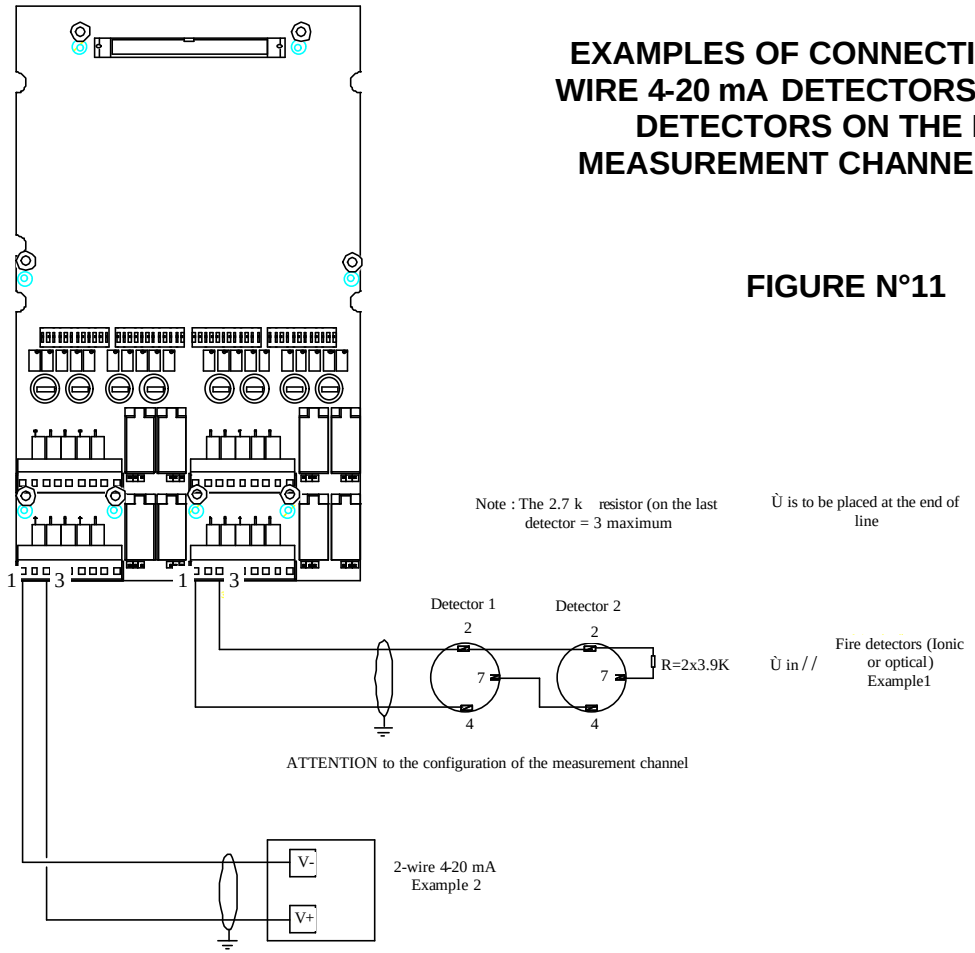


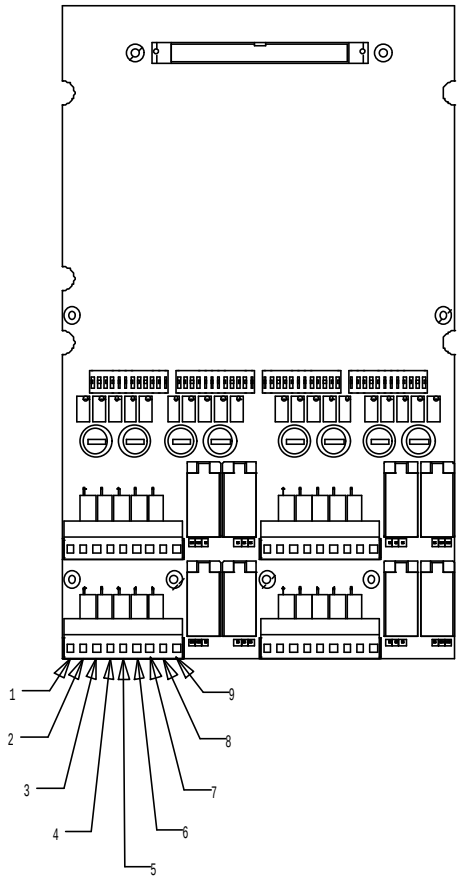
MX48 MEASUREMENT CHANNELS CARD
EXAMPLE OF CONNECTION OF EXPLOSIMETRIC DETECTORS AND 3-WIRE 4-20 mA DETECTORS

FIGURE N° 10

EXAMPLES OF CONNECTION OF 2-WIRE 4-20 mA DETECTORS AND FIRE DETECTORS ON THE MX48 MEASUREMENT CHANNELS CARD

FIGURE N°11



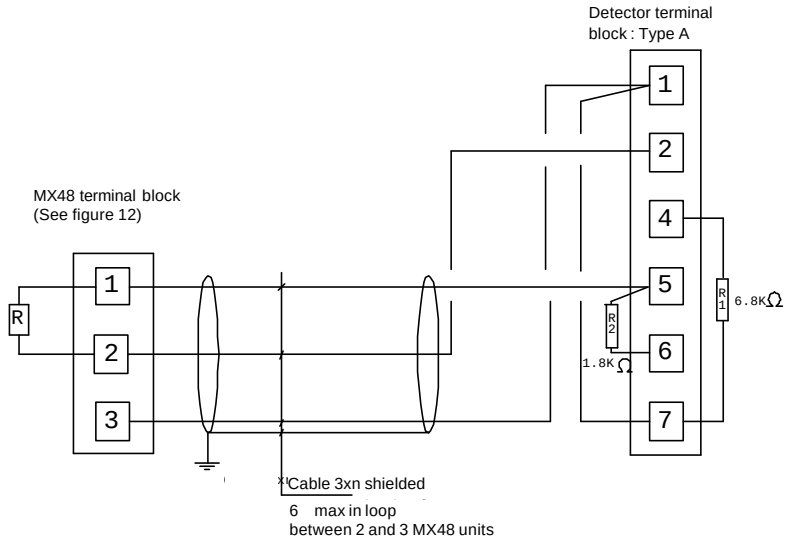


1: signal
2: minus
3: plus
4: +
5: -
6:
7:
8:
9:

detector
4-20 mA current output
Contact REL AL1
Contact REL AL2

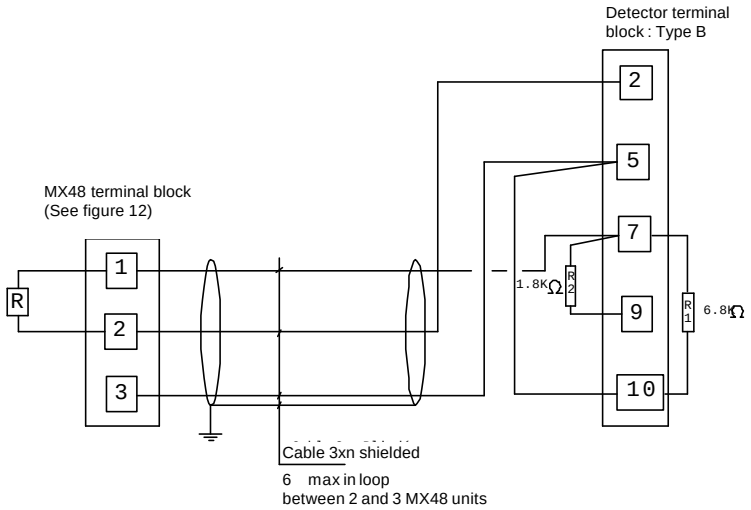
DETAILS OF CONNECTIONS OF A TERMINAL BLOCK TO THE MX48 MEASUREMENT CHANNELS

FIGURE 12



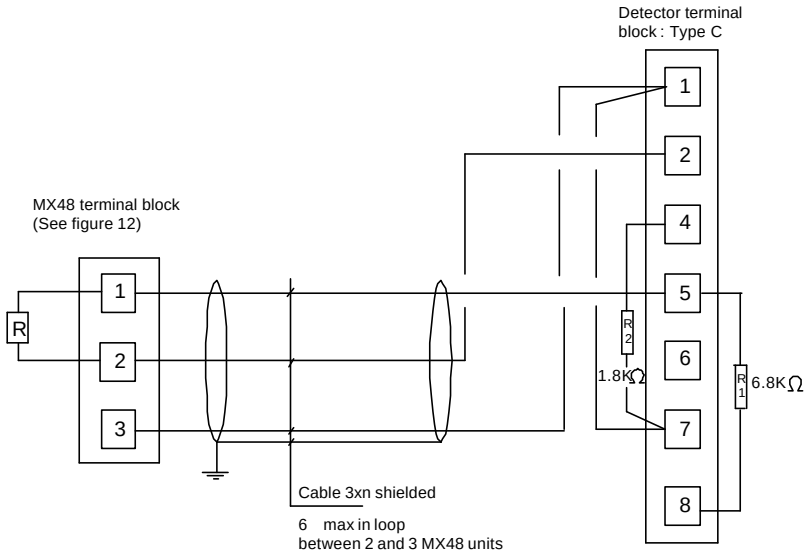
CONNECTION OF A FLAME DETECTOR
EQUIPPED WITH TERMINAL BLOCK OF TYPE A

FIGURE 13



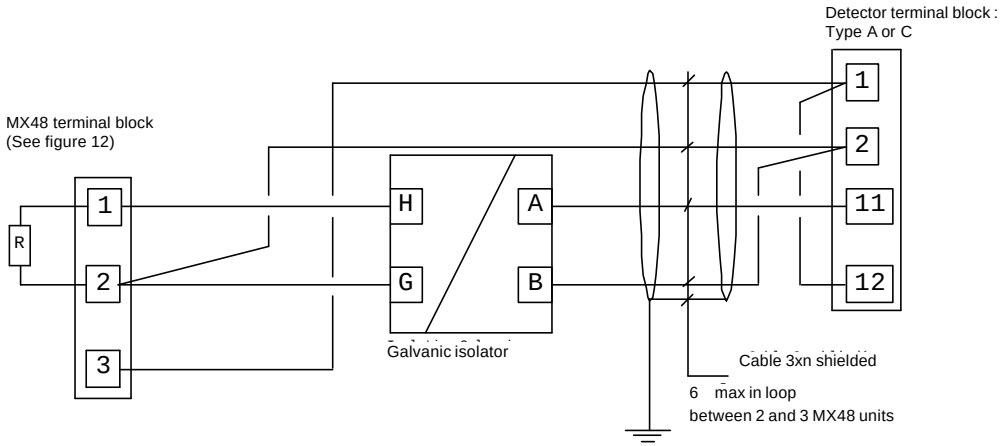
CONNECTION OF A FLAME DETECTOR
EQUIPPED WITH TERMINAL BLOCK OF TYPE B

FIGURE 14



CONNECTION OF A FLAME DETECTOR
EQUIPPED WITH TERMINAL BLOCK OF TYPE C

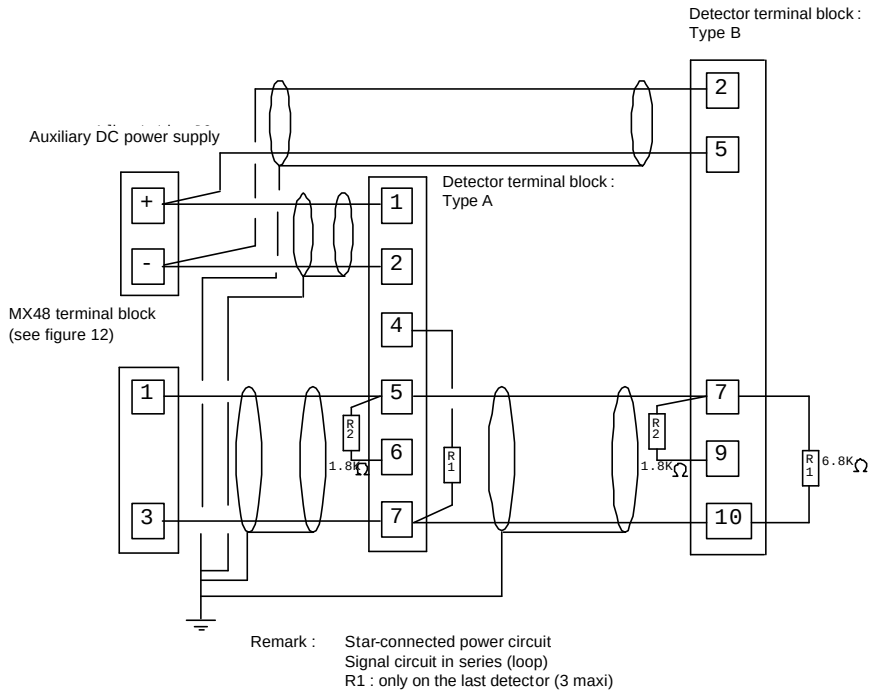
FIGURE 15



Remark : The detector relay can be used in local mode.
The galvanic isolator is located in the immediate vicinity of the MX48 unit.

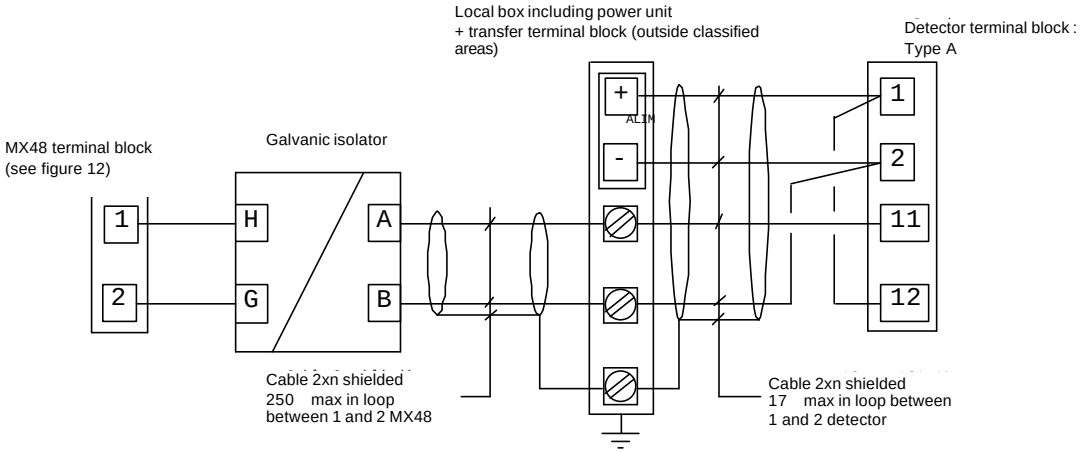
EXAMPLE OF UTILIZATION OF THE 4-20 mA SIGNAL SUPPLIED BY A FLAME DETECTOR (UV/IR OR IR3) EQUIPPED WITH TERMINAL BLOCK TYPE A OR C

FIGURE 16

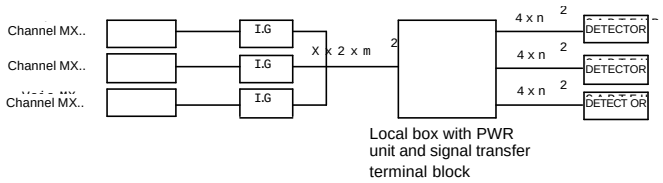


EXAMPLE OF UTILIZATION OF FLAME DETECTORS EQUIPPED WITH EITHER CONNECTOR A OR B AND SUPPLIED WITH AUXILIARY DC POWER

FIGURE 17



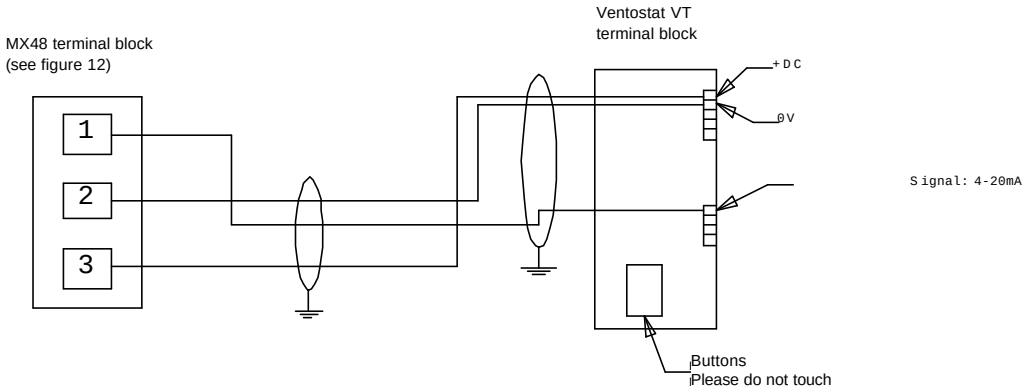
TYPICAL INSTALLATION BLOCK DIAGRAM TO BE MULTIPLIED BY NUMBER OF AREAS IN INSTALLATION



- a single detector per MX48 measuring channel
- the detector rely can be used in local mode.
- The galvanic isolator is located in the immediate vicinity of the MX48 unit.

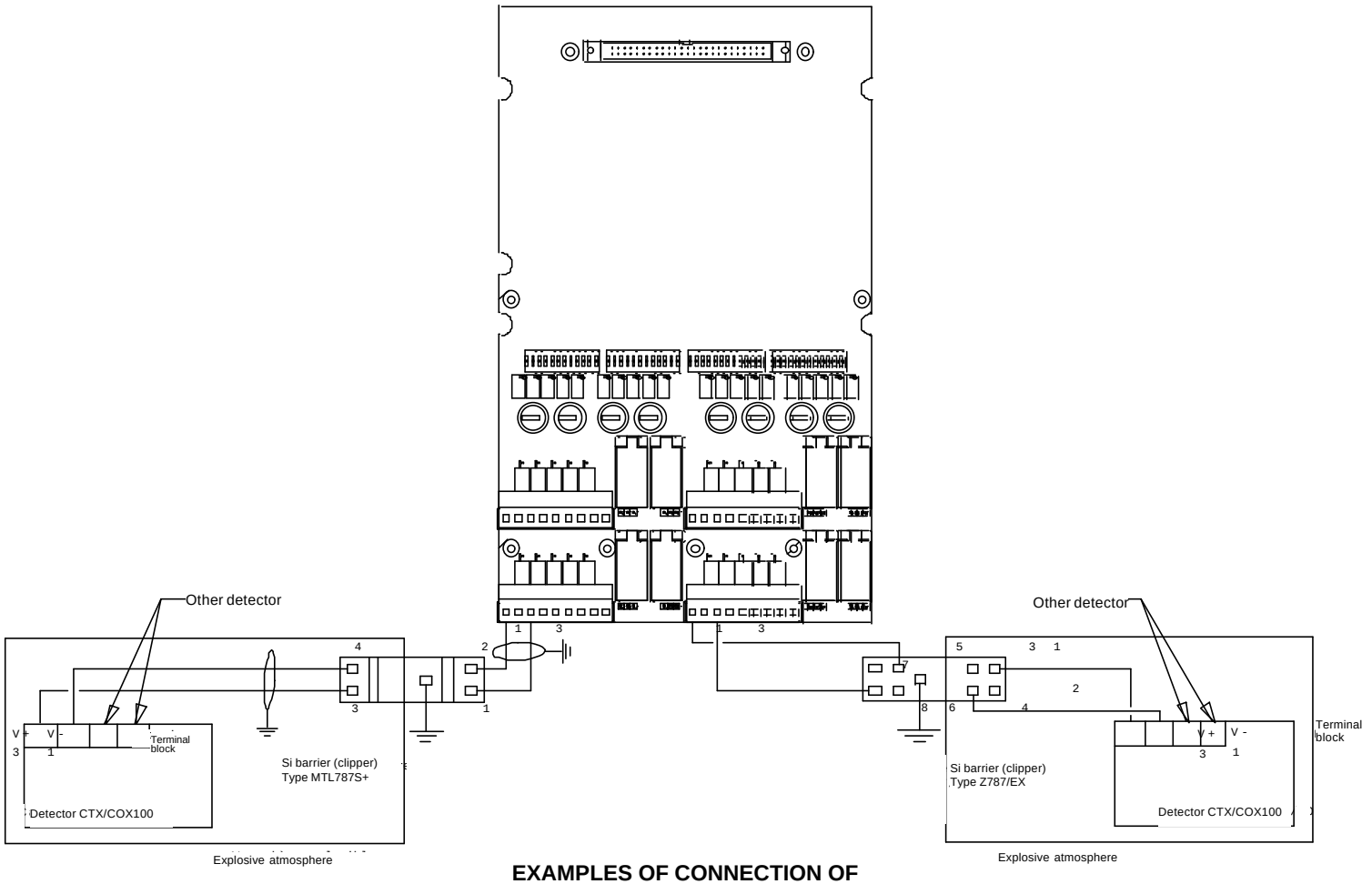
EXAMPLE OF UTILIZATION OF AN INTERCONNECTION BOX AND A GALVANIC ISOLATOR

FIGURE 18



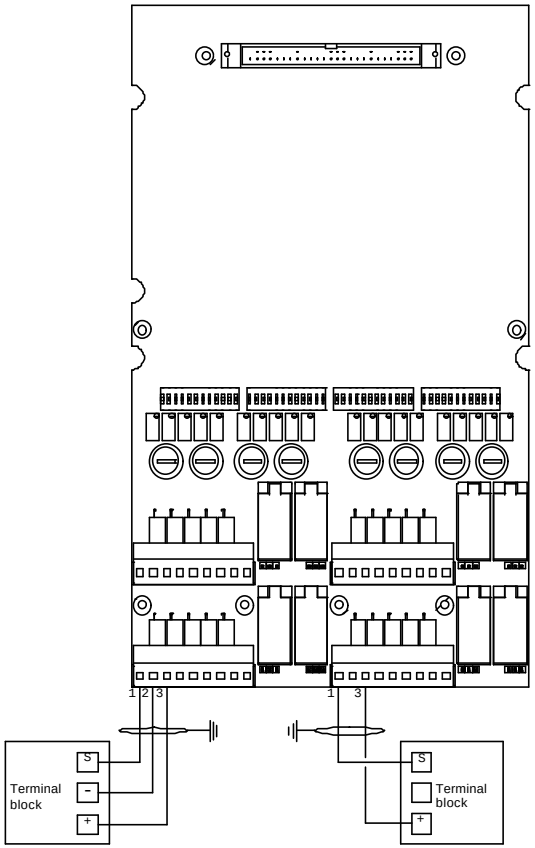
CONNECTION OF A CO2 DETECTOR
OF VENTOSTAT VT TYPE

FIGURE 20



EXAMPLES OF CONNECTION OF DETECTORS WITH Si BARRIERS

FIGURE 21

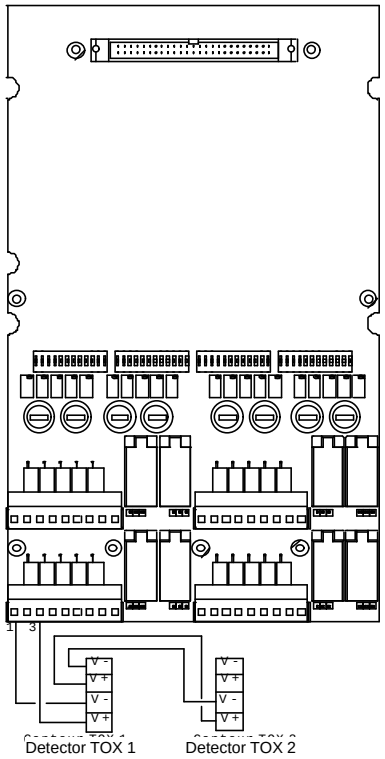


3-wire 4-20 mA detectors other than OLDHAM models

2-wire 4-20 mA detectors other than OLDHAM models

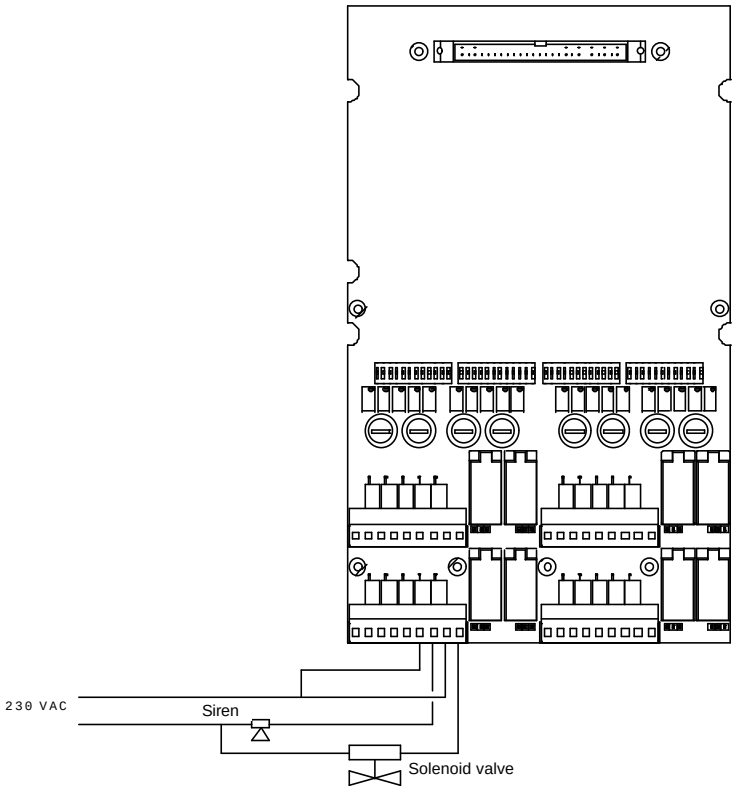
4-20 mA DETECTORS OTHER THAN OLDHAM MODELS
(Power-supplied by MX48 unit)

FIGURE 22



EXAMPLE OF "PARALLEL" WIRING OF 2 DETECTORS OF CTX50 (5 maximum)

FIGURE 23



EXAMPLE OF CONNECTION OF EXTERNAL DEVICES TO THE ALARM 1 AN 2 RELAY CONTACTS OF A MX48 MEASURING CHANNEL

FIGURE 24

OLDHAM s'engage - OLDHAM undertakes

Parce que la sécurité des hommes et la protection de l'environnement sont notre priorité, OLDHAM s'engage et définit ses normes qualité :

Because safety for personnel and protection of the environment are our priorities, OLDHAM gives the following undertakings and defines its quality standards :

1 Les Plus

OLDHAM s'engage au travers de son personnel qualifié, à répondre rapidement et efficacement à vos besoins de conseil, de suivi de commande, et ce, partout dans le monde.
OLDHAM s'engage à répondre dans les plus brefs délais à toutes questions d'ordre technique.

2 Qualité

OLDHAM s'engage à vous assurer une qualité de produits et de services à la hauteur de vos exigences, conformément au cahier des charges de la norme **ISO 9001** et **ATEX**.

3 Fiabilité & Contrôles

OLDHAM s'engage à vous fournir un matériel fiable. La qualité de notre production est une condition essentielle à cette fiabilité. Elle est garantie grâce à des vérifications très strictes réalisées dès l'arrivée des matières premières, en cours et en fin de fabrication (tout matériel expédié est configuré selon vos besoins).

4 Mise en service

OLDHAM s'engage, si vous le désirez, à la mise en service de votre matériel par nos techniciens spécialisés. Un gage de sécurité supplémentaire.

5 Formation

OLDHAM s'engage à faire disposer aux utilisateurs de ses produits, d'un service de formation complet : plusieurs ingénieurs pédagogues, salle de conférences, matériels disponibles pour les manipulations, matériel informatique et de visualisation, etc.

6 Contrat d'entretien

OLDHAM s'engage à vous proposer des contrats d'entretien évolutifs au regard de vos besoins pour vous garantir une parfaite sécurité :

- une ou plusieurs visites par an, garantie totale ou partielle,
- renouvelable par tacite reconduction,
- incluant le réglage des centrales de mesure, l'étalonnage des appareils et le contrôle des asservissements.

7 Dépannage sur site

OLDHAM s'engage à faire intervenir ses techniciens du **Service Après Vente** rapidement. Ceci est possible grâce à la répartition judicieuse de nos agences en **France** et de nos agents à l'étranger.

8 Dépannage en usine

OLDHAM s'engage à traiter tout problème qui ne pourrait être résolu sur site par le renvoi du matériel en usine. Des équipes de **techniciens spécialisés** seront mobilisées pour réparer votre matériel, dans les plus brefs délais, limitant ainsi au maximum la période d'immobilisation.
Pour toute intervention du Service Après Vente en France, un numéro Indigo a été mis en place : le o 825 842 843

1 *Strong points*

*Through its qualified personnel, **OLDHAM undertakes** to respond to your needs for advice and order follow-up services wherever in the world you may be.*
***OLDHAM undertakes** to answer all your technical questions as quickly as possible.*

2 *Quality*

***OLDHAM undertakes** to provide you with products and services of a quality that meets your requirements, in accordance with the specifications of **ISO 9001** and **ATEX** standards.*

3 *Reliability and inspections*

***OLDHAM undertakes** to supply you with reliable equipment. The quality of our production is essential to achieve reliability. Quality is ensured by extremely strict verifications carried out as soon as raw materials are received, during production and at the end of manufacture (all shipped equipment is configured to meet your requirements).*

4 *Start-up*

***OLDHAM undertakes** that our expert technicians will start up your equipment, if you so wish. This gives you the guarantee of additional safety.*

5 *Training*

***OLDHAM undertakes** to provide the users of its products with a complete training service : a number of engineers specialized as instructors, conference rooms, equipment available for practical exercises, computer equipment, display equipment, etc.*

6 *Maintenance contract*

***OLDHAM undertakes** to offer you open-ended maintenance contracts according to your needs so as to give you the guarantee of complete safety :*

- *one or more visits a year, comprehensive or partial warranty,*
- *renewal by tacit agreement,*
- *including the adjustment of measuring units, the calibration of equipment and the verification of servo-control systems.*

7 *Field servicing*

***OLDHAM undertakes** to send out its **After-Sales Service** technicians quickly for servicing on your site. This is made possible by the efficient network of our branches throughout **France** and other countries.*

8 *Factory repairs*

***OLDHAM gives the undertaking** that any problem that cannot be solved in the field will be dealt with by the return of the equipment concerned to our factory. Teams of **specialized technicians** are on hand to ensure the immediate repair of your equipment in the shortest possible time, so keeping downtimes for your equipment to a minimum.*
For any specific technical question, please contact our After-Sales Service (M. Miguel RIESGUO) : 00 33 3 21 60 80 80

OLDHAM
DETECTION GAZ / MESURE A L'EMISSION
GAS DETECTION / STACK GAS MONITORING

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(33) 03 21 60 81 02	(55) 11 50 34 12 80	(42) 0222 728296	(40) 21 222 5037	(41) 26 652 51 19	(44) 0 1782 20 8228	(49) 231 924 125
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